

First records of *Urosaurus bicarinatus* (Duméril, 1856) (Squamata: Phrynosomatidae) from Cocinas Island, Chamela Bay, Jalisco, Mexico

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ABSTRACT: We report the first records of *Urosaurus bicarinatus* from Cocinas Island in Chamela Bay, Jalisco, Mexico. Four adult males were found in tropical deciduous forest on 7 and 10 December 2012.

Urosaurus bicarinatus is a small size arboreal lizard; males from mainland reach a SVL from 46 to 50 mm. This species presents a wide distribution that ranges from the state of Sonora to Michoacan (Ramírez-Bautista 1994). To date, this species has not been recorded in any of the islands located on the Pacific Coast of Mexico (García and Ceballos 1994; Ramírez-Bautista 1994).

Ramírez-Bautista (1994) reported that the herpetofauna from Chamela region, Jalisco, Mexico, consisted of 64 species; however, that number was expected to increase. Among the numerous Pacific islands near Chamela, inventories of amphibians and reptiles are incomplete due to the uneasy access the islands and, until recently, to the limited attention by herpetologists (García and Ceballos 1994). To have a better assessment of the situation, we began conducting field surveys of the herpetofauna on different islands located in Chamela Bay, which lie in the state of Jalisco. On 7 and 10 December 2012, we visited Cocinas Island, the largest island within the bay, which is located 3 km west of the mainland ($19^{\circ}32'49''$ N, $105^{\circ}06'35''$ W; Figure 1). Cocinas is of continental origin, and is presently covered by tropical deciduous forest, xerophytic scrub, and coastal dunes cliff scrub (CONANP 2008; Figure 2). During our survey of this island, we recorded for the first time the arboreal lizard, *Urosaurus bicarinatus*. Four male individuals were collected and later deposited in the Colección Herpetológica del Centro de Investigaciones Biológicas, Universidad Autónoma del Estado de Hidalgo (CIB 4291, 4292, 4293, 4294). The color pattern of the collected specimens is gray to white yellowish (Figure 3). The base of the tail is robust and the body rugose. The enlarged dorsals scales are strongly carinate and prominently mucronate. The tubercles of the lateral and dorsolateral folds are well developed and the ventral scales are mucronate. Males have two abdominal blue patches and with an orange or yellow throat (Ramírez-Bautista 1994). Snout-vent lengths (SVL) of these specimens ranged from 30–43 mm ($x = 35.5 \pm 2.8$ mm), and body mass ranged from 1.2 - 1.6 g ($x = 1.3 \pm 0.08$ g).

Two of the four specimens collected were perching in rocky areas; however, Ramírez-Bautista (1994) and

Canseco-Márquez and Gutiérrez-Mayén (2010) mentioned that this species is mainly of arboreal habits, and it is unusual to see them on rocks. Compared to populations of *Urosaurus bicarinatus* from mainland that display mostly an arboreal behavior, the presence of these individuals perching on rocks in the island was very likely due to feeding activity; that is, the individuals came down from the nearby trees to find food on the ground or on rocks. The latter observation could be explained also if food on the islands is scarcer than it is on mainland, and consequently the individuals might exploit a broader microhabitat range.

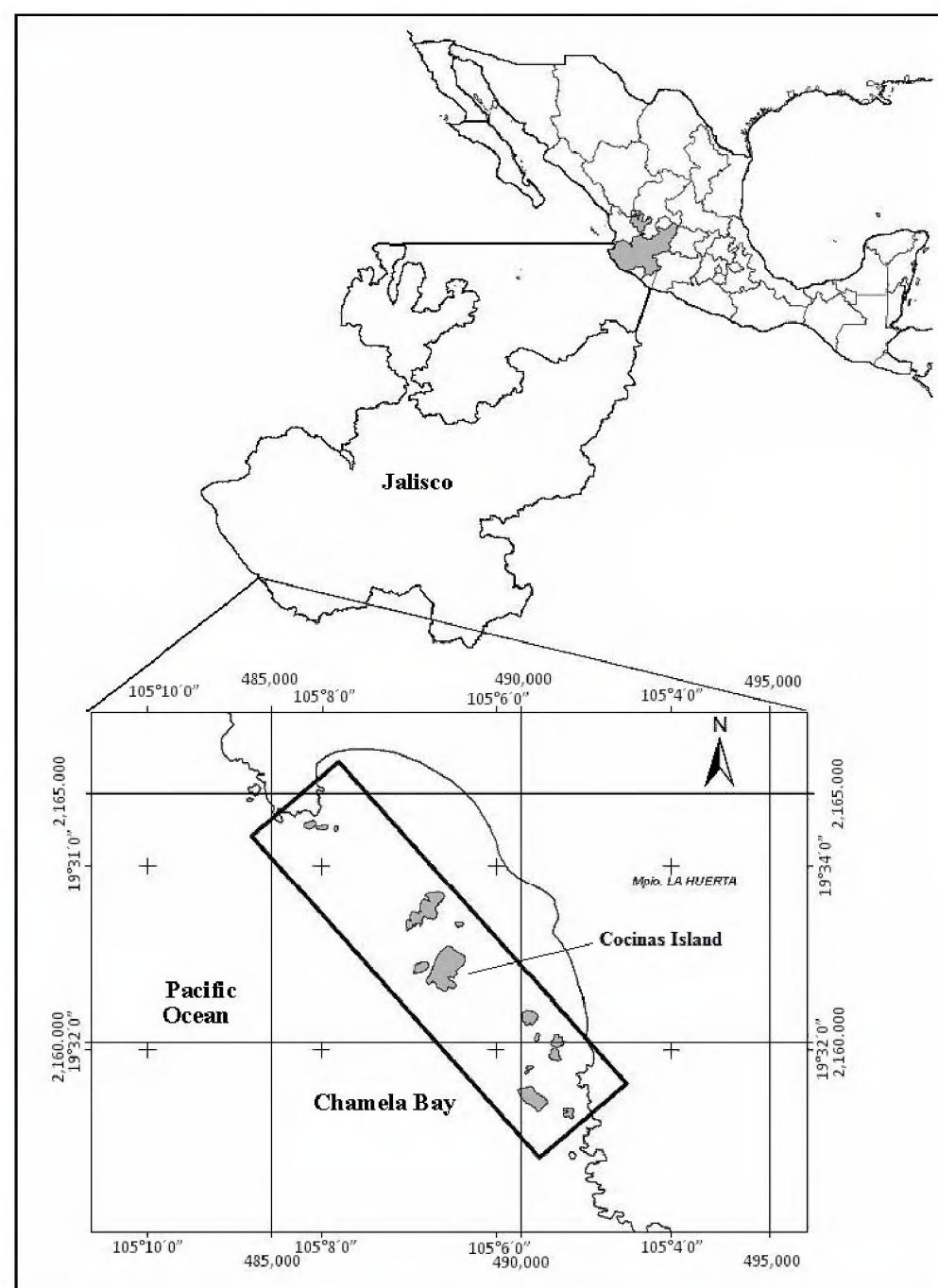


FIGURE 1. Map of Jalisco, México showing the location of Cocinas Island within Chamela Bay.



FIGURE 2. Vegetation types within dry forest during the early dry season in Cocinas Island. Photo by U. Hernández-Salinas.



FIGURE 3. Adult male *Urosaurus bicarinatus* from Cocinas Island. Specimen (CIB 4291) perching at the base of a 2 m height cactus. Photo by U. Hernandez-Salinas.

As mentioned above, these observations represent the first definitive record of *Urosaurus bicarinatus* on Cocinas Island, although CONANP (2008), in a technical report, mentioned the possibility that this species occurred on the island. Currently there are several hypotheses for the arrival and colonization of flightless vertebrate groups in islands; and probably this was also the case for *U. bicarinatus* (Casas-Andreu 1992). First, this species was present along an outer portion of the Pacific-facing mainland that later did separate during a tectonically active period that eventually formed the island (Carlquist 1965); second, this species actively dispersed to the island from mainland when a land bridge formed during the Pleistocene (Casas-Andreu 1992); third, many small species of reptiles and mammals such as *U. bicarinatus*

may have passively dispersed over water to Cocinas Island by rafting on floating objects originating in mainland (Carlquist 1965); and lastly, is possible that lizards were recent invaders brought to the island directly by human intervention (Andrews 1979; Whittaker and Fernández-Palacios 2010).

Currently, *Urosaurus bicarinatus* is the only species recorded for Cocinas Island; however, with a higher sampling effort, we could possibly find a greater species richness of reptiles, including amphibians too. Additionally, it is important to mention that the population size of *U. bicarinatus* from Cocinas Island is not very abundant because we observed only four individuals during the length of our study.

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